10

```
<CATALOG>                                    (12, 18)
  <CD>                                       (20)
    <TITLE>Empire Burlesque</TITLE>          (22, 16, 24, 26)
    <ARTIST>Bob Dylan</ARTIST>
  <COUNTRY>USA</COUNTRY>
   <COMPANY>Columbia</COMPANY>
    <PRICE>10.90</PRICE>
    <YEAR>1985</YEAR>
   </CD>
  <CD>
     <TITLE>Hide your heart</TITLE>
     <ARTIST>BonnieTylor</ARTIST>
  <COUNTRY>UK</COUNTRY>
  <COMPANY>CBS Records</COMPANY>
    <PRICE>9.90</PRICE>
    <YEAR>1988</YEAR>
   </CD>
  <CD>
     <TITLE>Greatest Hits</TITLE>
     <ARTIST>Dolly Parton</ARTIST>
  <COUNTRY>USA</COUNTRY>
  <COMPANY>RCA</COMPANY>
    <PRICE>9.90</PRICE>
    <YEAR>1982</YEAR>
   </CD>
  <CD>
     <TITLE>Still got the blues</TITLE>
     <ARTIST>Gary More</ARTIST>
   <COUNTRY>UK</COUNTRY>
    <COMPANY>Virgin records</COMPANY>
    <PRICE>10.20</PRICE>
    <YEAR>1990</YEAR>
  </CD>
</CATALOG>                                   (14)
```

FIG. 1

52
56
62
68
54
58
64
46
40
42
1,B,S,[ ],0,1,ND>MetaData>http://neocore.com/docMetaData:MetaData>http://neocore.com/docMetaData:TimeStamp>,
1,N,I,[ ],0,4,ND>MetaData>http://neocore.com/docMetaData:MetaData>http://neocore.com/docMetaData:DocID>,c:\testxml\testdoe.xml
1,N,E,[ ],0,4,ND>MetaData>http://neocore.com/docMetaData:MetaData>http://neocore.com/docMetaData:SchemaName>,schema
3,N,E,[ ],0,4,ND>MetaData>http://neocore.com/docMetaData:MetaData>http://neocore.com/docMetaData:InstructFileName>,ifile
1,N,E,[ ],0,2,ND>MyHeader>,Header
47
50
44
1,N,E,[ ],0,2,ND>CATALOG>CD>TITLE>,Empire Burlesque
16
66
1,N,E,[ ],5,4,ND>CATALOG>CD>ARTIST>Bob Dylan
48
1,N,E,[ ],5,4,ND>CATALOG>CD>COUNTRY>,USA
1,N,E,[ ],5,4,ND>CATALOG>CD>COMPANY>,Columbia
1,N,E,[ ],5,4,ND>CATALOG>CD>PRICE>,10.90
60
2,N,E,[ ],5,4,ND>CATALOG>CD>YEAR>,1985
1,N,E,[ ],5,3,ND>CATALOG>CD>TITLE>,Hide your heart
1,N,E,[ ],11,4,ND>CATALOG>CD>ARTIST>,Bonnie Tylor
1,N,E,[ ],11,4,ND>CATALOG>CD>COUNTRY>,UK
1,N,E,[ ],11,4,ND>CATALOG>CD>COMPANY>,CBS Records
1,N,E,[ ],11,4,ND>CATALOG>CD>PRICE>,9.90
2,N,E,[ ],11,4,ND>CATALOG>CD>YEAR>,1988
1,N,E,[ ],5,3,ND>CATALOG>CD>TITLE>,Greatest Hits
1,N,E,[ ],17,4,ND>CATALOG>CD>ARTIST>Dolly Parton
1,N,E,[ ],17,4,ND>CATALOG>CD>COUNTRY>,USA
1,N,E,[ ],17,4,ND>CATALOG>CD>COMPANY>,RCA
1,N,E,[ ],17,4,ND>CATALOG>CD>PRICE>,9.90
2,N,E,[ ],17,4,ND>CATALOG>CD>YEAR>,1982
1,N,E,[ ],5,3,ND>CATALOG>CD>TITLE>,Still got the blues
1,N,E,[ ],23,4,ND>CATALOG>CD>ARTIST>,Gary More
1,N,E,[ ],23,4,ND>CATALOG>CD>COUNTRY>,UK
1,N,E,[ ],23,4,ND>CATALOG>CD>COMPANY>,Virgin Records
1,N,E,[ ],23,4,ND>CATALOG>CD>PRICE>,10.20
2,N,E,[ ],23,4,ND>CATALOG>CD>YEAR>,1990

FIG. 2

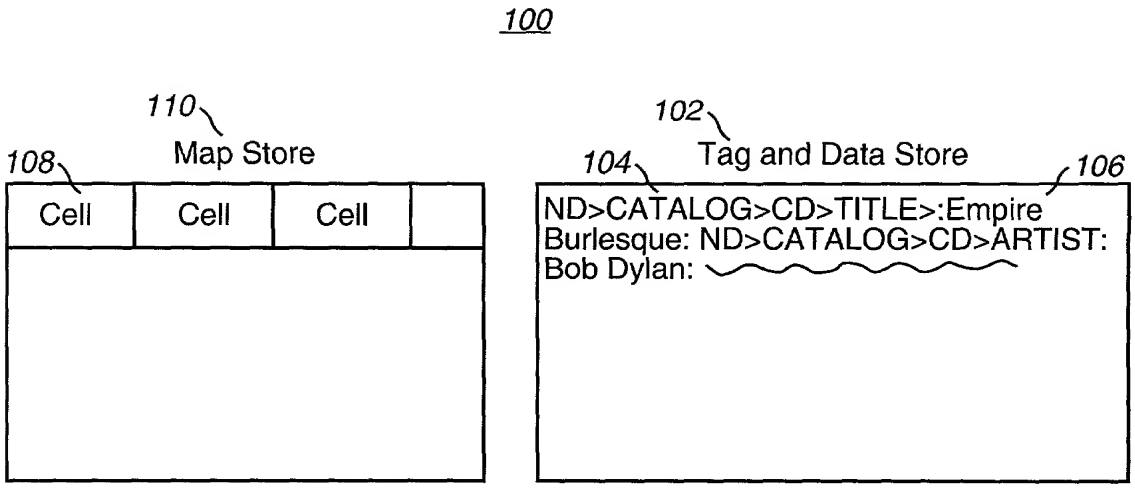
100
110
Map Store
108
Cell
Cell
Cell
102
Tag and Data Store
104
106
ND>CATALOG>CD>TITLE>:Empire
Burlesque: ND>CATALOG>CD>ARTIST:
Bob Dylan:

FIG. 3

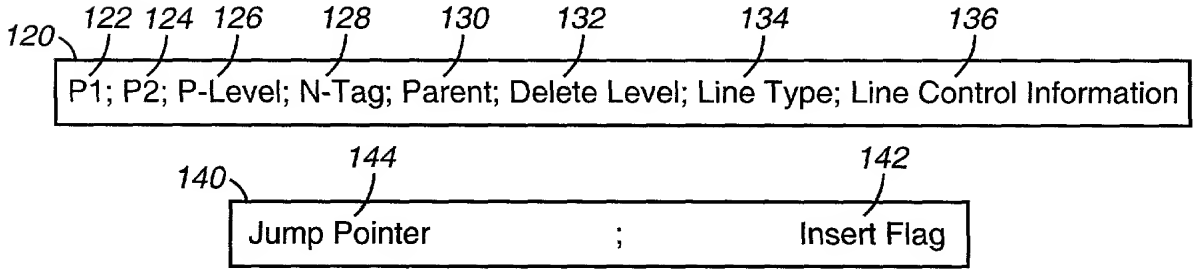
120
122
124
126
128
130
132
134
136
P1; P2; P-Level; N-Tag; Parent; Delete Level; Line Type; Line Control Information
140
144
142
Jump Pointer
;
Insert Flag

FIG. 4

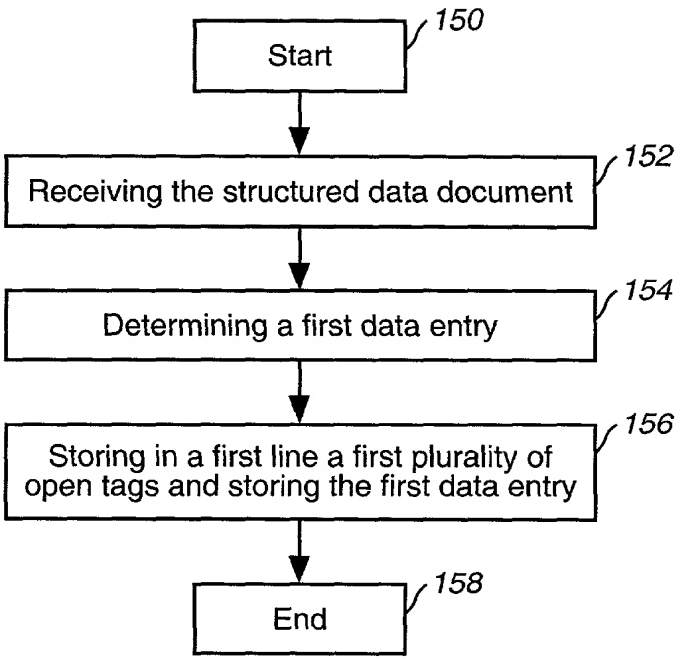
Start
150
Receiving the structured data document
152
Determining a first data entry
154
Storing in a first line a first plurality of open tags and storing the first data entry
156
End
158

FIG. 5

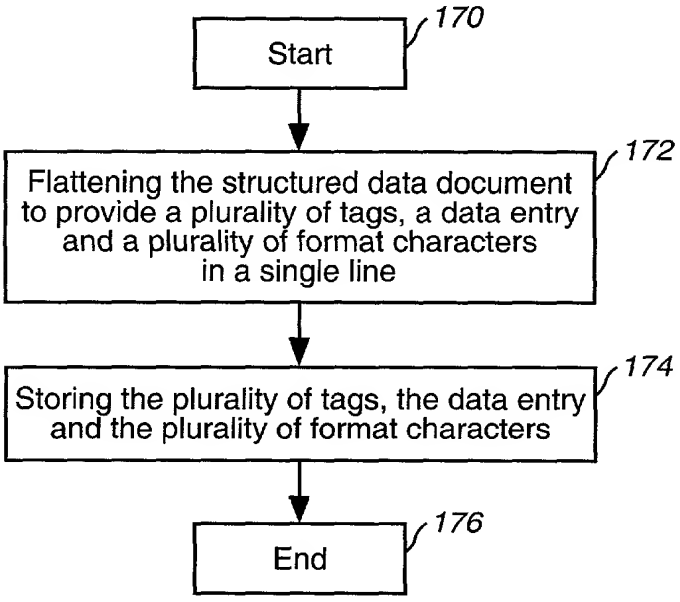
Start
170
Flattening the structured data document to provide a plurality of tags, a data entry and a plurality of format characters in a single line
172
Storing the plurality of tags, the data entry and the plurality of format characters
174
End
176

FIG. 6

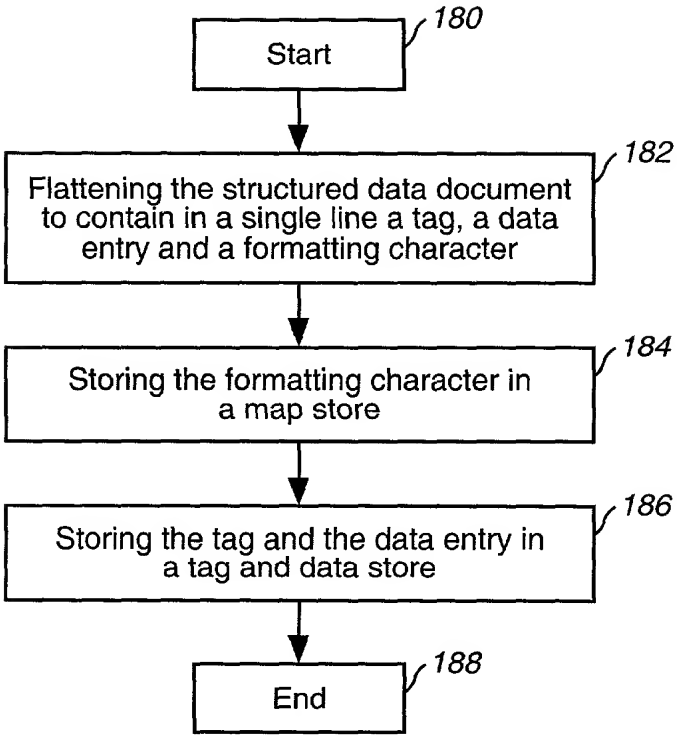
Start
180
Flattening the structured data document to contain in a single line a tag, a data entry and a formatting character
182
Storing the formatting character in a map store
184
Storing the tag and the data entry in a tag and data store
186
End
188

FIG. 7

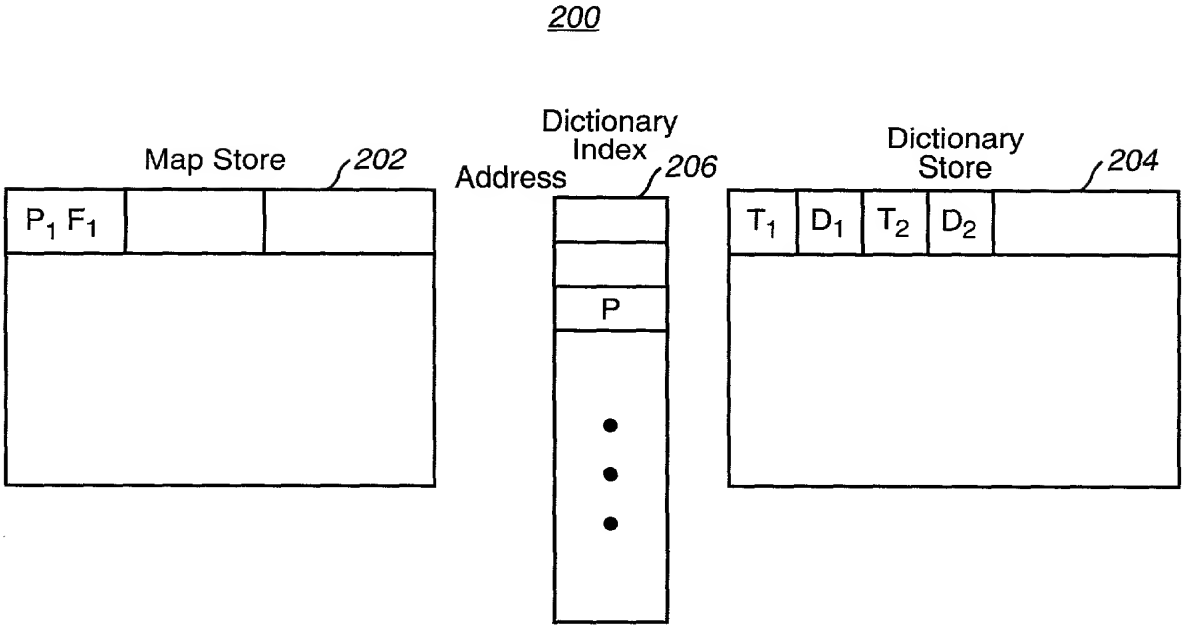
200
Map Store
202
P_1 F_1
Dictionary Index Address
206
P
Dictionary Store
204
T_1 D_1 T_2 D_2

FIG. 8

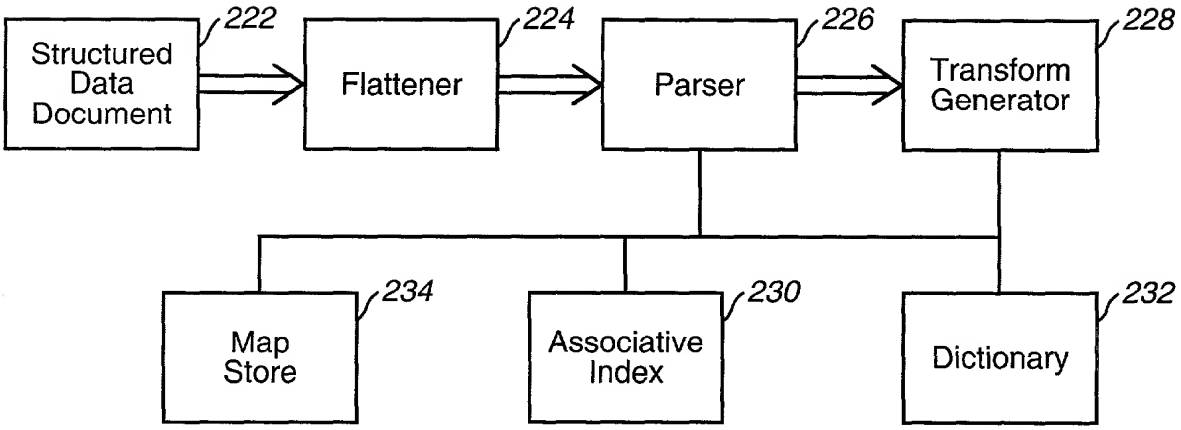
220
Structured Data Document
222
Flattener
224
Parser
226
Transform Generator
228
Map Store
234
Associative Index
230
Dictionary
232

FIG. 9

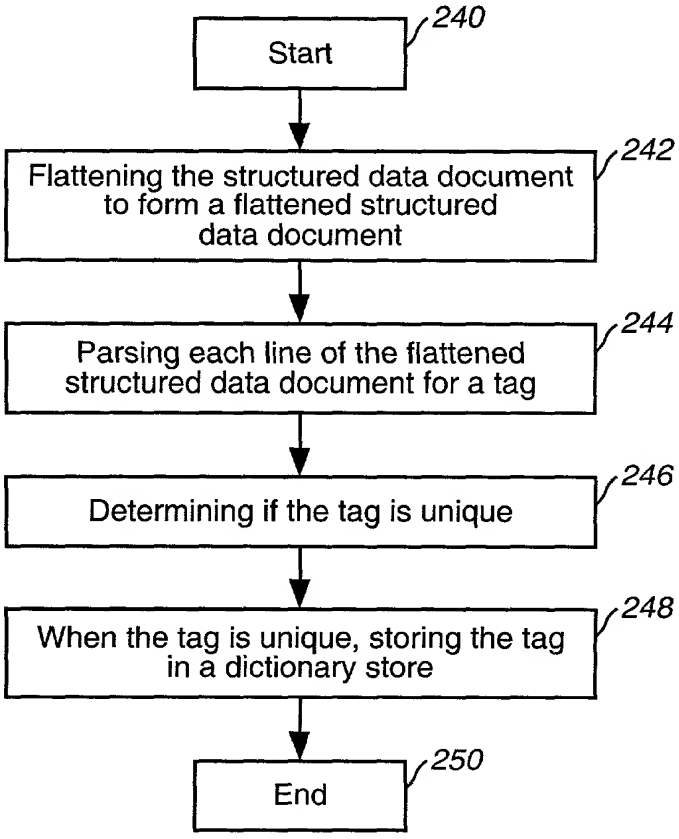
Start
240
Flattening the structured data document to form a flattened structured data document
242
Parsing each line of the flattened structured data document for a tag
244
Determining if the tag is unique
246
When the tag is unique, storing the tag in a dictionary store
248
End
250

FIG. 10

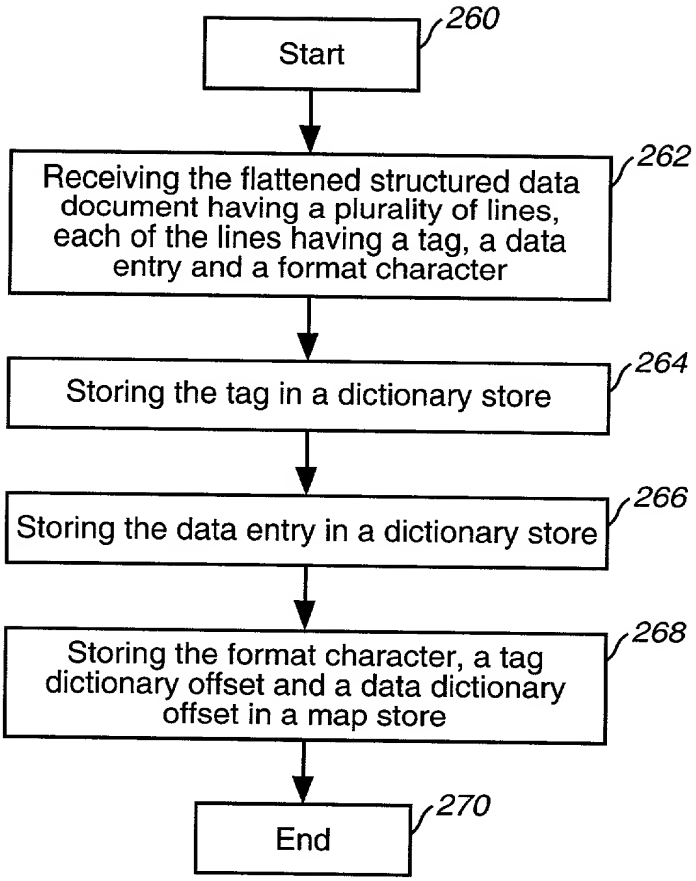
Start
260
Receiving the flattened structured data document having a plurality of lines, each of the lines having a tag, a data entry and a format character
262
Storing the tag in a dictionary store
264
Storing the data entry in a dictionary store
266
Storing the format character, a tag dictionary offset and a data dictionary offset in a map store
268
End
270

FIG. 11

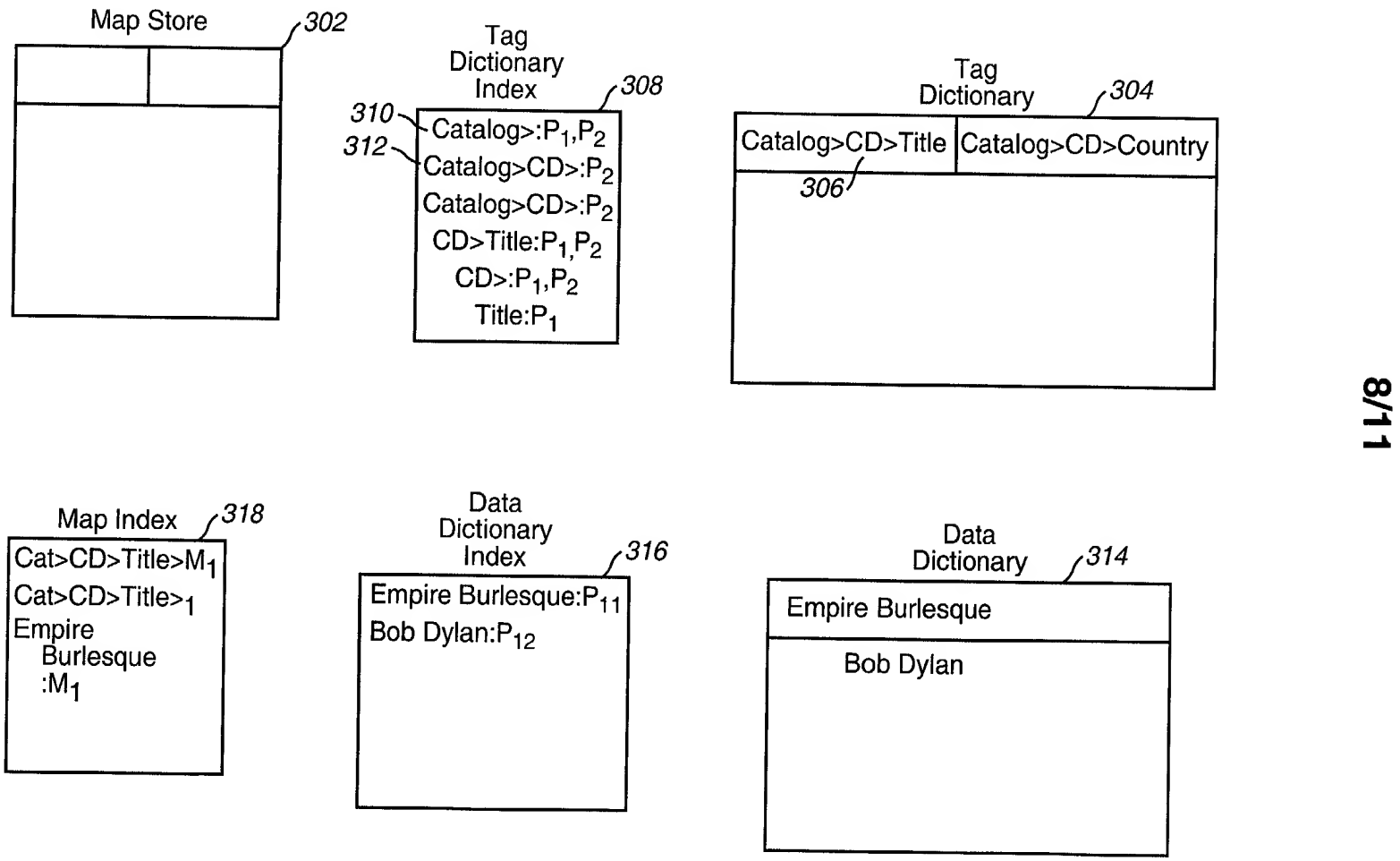
300
Map Store
302
Tag Dictionary Index
308
310
312
Catalog>:P1,P2
Catalog>CD>:P2
Catalog>CD>:P2
CD>Title:P1,P2
CD>:P1,P2
Title:P1
Tag Dictionary
304
Catalog>CD>Title
Catalog>CD>Country
306
Map Index
318
Cat>CD>Title>M1
Cat>CD>Title>1
Empire Burlesque :M1
Data Dictionary Index
316
Empire Burlesque:P11
Bob Dylan:P12
Data Dictionary
314
Empire Burlesque
Bob Dylan

FIG. 12

/ Catalog / CD / Title
330
/ Catalog / CD / Title / Empire Burlesque
332
/ CD / Title
334
Empir*
336
*pire
338

FIG. 13

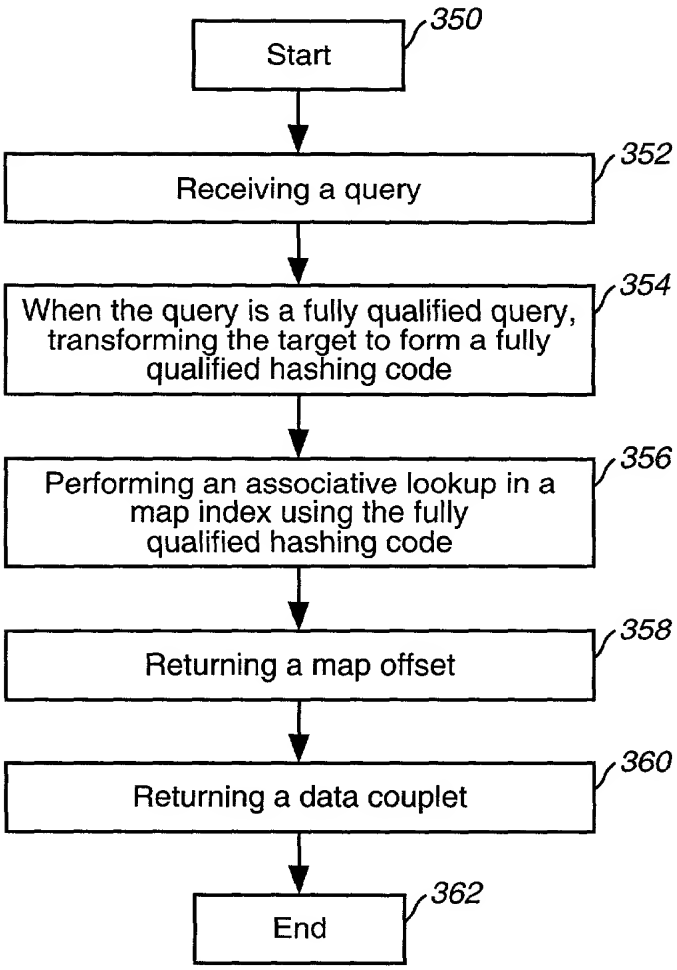
Start
350
Receiving a query
352
When the query is a fully qualified query, transforming the target to form a fully qualified hashing code
354
Performing an associative lookup in a map index using the fully qualified hashing code
356
Returning a map offset
358
Returning a data couplet
360
End
362

FIG. 14

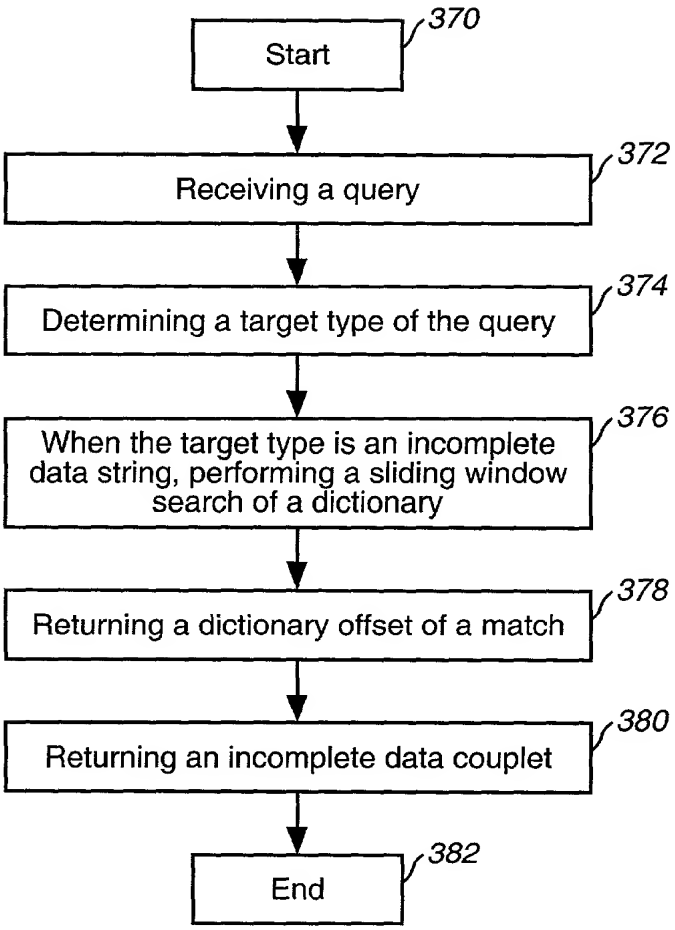
Start
370
Receiving a query
372
Determining a target type of the query
374
When the target type is an incomplete data string, performing a sliding window search of a dictionary
376
Returning a dictionary offset of a match
378
Returning an incomplete data couplet
380
End
382

FIG. 15

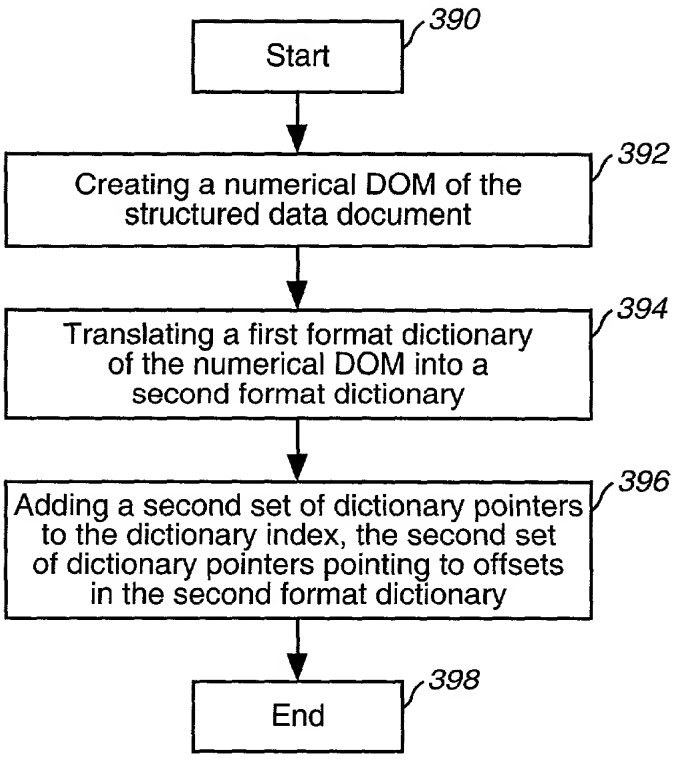
Start
390
Creating a numerical DOM of the structured data document
392
Translating a first format dictionary of the numerical DOM into a second format dictionary
394
Adding a second set of dictionary pointers to the dictionary index, the second set of dictionary pointers pointing to offsets in the second format dictionary
396
End
398

FIG. 16

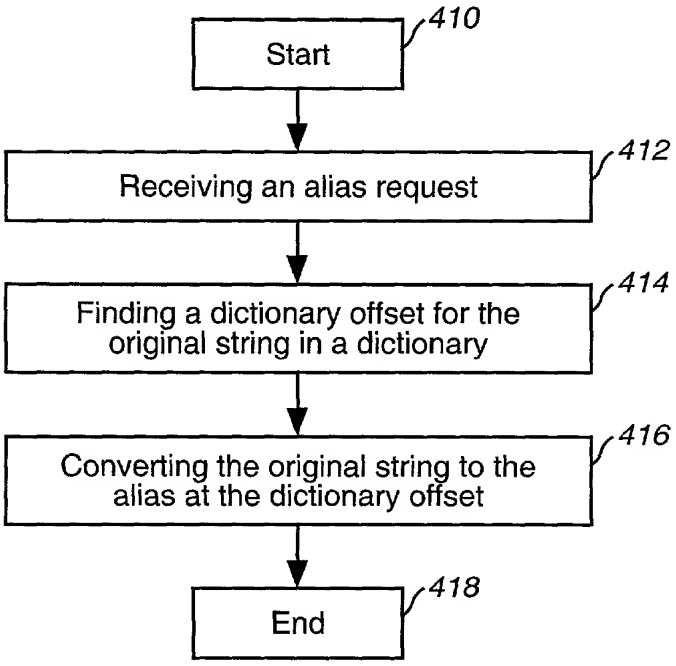
Start
410
Receiving an alias request
412
Finding a dictionary offset for the original string in a dictionary
414
Converting the original string to the alias at the dictionary offset
416
End
418

FIG. 17